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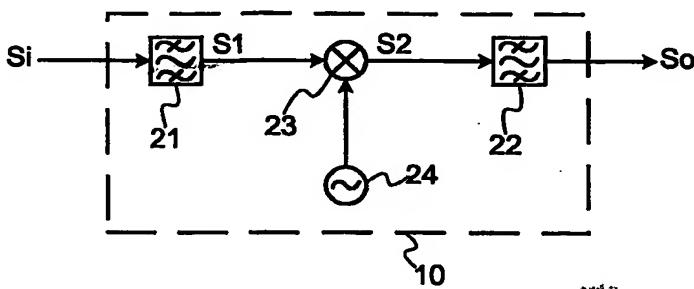
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(54) Title: HIGHLY SELECTIVE FILTERING DEVICE AND CORRESPONDING FILTERING METHOD



(57) Abstract: The invention proposes a filtering device 10 having a frequency response which is symmetrical, using asymmetrical filters 21 and 22 coupled by transposition means 23 and 24. The advantageous characteristics of the asymmetrical filters 21 and 22 are retained and the faults associated with the asymmetry are eliminated. The asymmetrical filters 21 and 22 are, for example, quartz filters. The invention also proposes an external transmission and reception unit 1, using the filtering device 10 with the application of the filtering method.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 282 286 A (MOTOROLA INC) 29 March 1995 (1995-03-29) figures 8,10	1-3
A	US 5 844 939 A (SCHERER DIETER ET AL) 1 December 1998 (1998-12-01) abstract; figure 5	4-6
A	US 4 310 803 A (KURIHARA HIROSHI ET AL) 12 January 1982 (1982-01-12)	
A	US 5 097 221 A (MILLER JEFFRY J) 17 March 1992 (1992-03-17)	

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Patent family members are listed in annex.

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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
GB 2282286	A	29-03-1995	NONE		
US 5844939	A	01-12-1998	DE	19748913 A1	20-08-1998
			GB	2322983 A	09-09-1998
			JP	10256938 A	25-09-1998
US 4310803	A	12-01-1982	JP	1306819 C	13-03-1986
			JP	55028674 A	29-02-1980
			JP	60031368 B	22-07-1985
			CA	1137573 A1	14-12-1982
			DE	2933693 A1	28-02-1980
			FR	2434517 A1	21-03-1980
			GB	2032213 A ,B	30-04-1980
			IT	1122449 B	23-04-1986
US 5097221	A	17-03-1992	NONE		